Duration and Location

The CSCNSI is executed as a paid ten-week research internship and will be held at the Los Alamos Research Park in Los Alamos, NM. The facilities are equipped with student workspace and a server room for hands-on cluster configuration. An instructor will conduct lectures and supervise machine room activities.

Los Alamos Research Park.

How to Apply

Applications are due on or before
December 1, 2017

Undergraduate and graduate students in computer science, engineering, and information technology related majors are encouraged to apply.

Students hired into these positions have the potential to work toward a regular position within a Division that will require a Q Clearance. To obtain a Q Clearance, an individual must be at least 18 years of age; U.S. citizenship is required except in very limited circumstances and must meet eligibility requirements for access to classified matter. See DOE Order 472.2 for additional information. Applicants selected will be subject to a Federal background investigation.

- Submit a current resume
- Unofficial university transcript (with Spring courses posted and/or a copy of Spring 2018 schedule)
  - Undergraduate 3.0 GPA minimum
  - Graduate 3.2 GPA minimum
- Letter of intent stating strengths, goals, and interests and how a CSCNSI appointment will help you achieve your goals

Send all application materials to:

Email: apply-cscnsi@lanl.gov
Fax: (505) 663-5504

Questions? apply-cscnsi@lanl.gov
Students will be notified of selection by mid December 2017.

LA-UR-17-28369

Los Alamos NATIONAL LABORATORY EST.1943

ISTI INFORMATION SCIENCE & TECHNOLOGY INSTITUTE

2018
Computer System, Cluster, and Networking Summer Institute

June 5 - August 10

The Powerwall brings the latest in 3D simulations from LANL's cluster computers to life, allowing scientists immersive interaction with their research.

Purpose

The Computer System, Cluster, and Networking Summer Institute (CSCNSI) is a focused technical enrichment program for students currently engaged in computer science, computer engineering, or similar major. The primary objective of the CSCNSI is to provide a thorough introduction to the techniques and practices of cluster computing. The program includes lecture, laboratory, and professional development components. Students explore current challenges in high performance computing (HPC) through the inclusion of an extensive seminar series consisting of seminars given by practitioners and researchers actively engaged in HPC-related topical areas. At its core, the CSCNSI is an intensive project-driven technical summer program during which small student teams actively build computer clusters and then execute real-world, HPC-related research projects under the advisement of an assigned mentor or mentor team. The CSCNSI is also an innovative, proactive approach to making the students aware of career possibilities within the Laboratory.

Description

The CSCNSI is designed to provide students with hands-on experience in setting up, configuring, administering, testing, and monitoring of computer clusters and associated networks.

The CSCNSI exposes students to a variety of key HPC-related topics via instruction, tutorials, seminars, and guest lectures.

"It was a great experience. I came hoping to learn about a new facet of computer science and I did just that. Being part of the amazing community of Los Alamos and networking with people at LANL has made me consider coming back to the Lab." — 2017 Student

Past Research Project Topics

HPC Monitoring Techniques and Scalability

File Systems

- Tuning and Performance Improvements
- Software and Hardware Evaluation
- RAID and Erasure Coding Evaluation

Networks

- Congestion Studies
- Network Hardware Evaluation
- Network Security
- CPU Offloading
- Virtual Machine and Linux Container Network Performance

Professional Development Activities

- Team Building
- Resume Writing
- Technical Poster Development
- Technical Presentation Skills

In addition, the High Performance Computing Division and the LANL Student Program Office host a wide variety of exciting technical talks/lectures by esteemed scientists and engineers, facility tours, professional development workshops and extracurricular activities. Past students got to engage with one of the leading Mars Rover designers, go on geological adventures and take a behind the scenes look at the super computing facility. We hope you will join us for everything Los Alamos has to offer.

Students

This highly-selective program is designed for third year (i.e., Junior) and above undergraduate and graduate students, although in some cases, Sophmore applicants may be considered.

As a general guideline, students should have experience with the LINUX operating system and sufficient academic achievement to make them eligible graduate school candidates upon completion of their undergraduate program. Computing and information technology students will be considered.

"It was an amazing experience, and I wish it wasn't over. I think it's enough to say that I came in kind of regretting accepting since I really wanted to go into industry, and came out considering a career working here at LANL." — 2017 Student